

# Work Order ID 123482

Thursday, August 07, 2014 11:16:41 AM

047.3912

\*123482\*

Page 1

Item ID: 647.3912

047.3912

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

REV-C

Stop

\*NS2\*

Item Name: Lower Deflector

Start Date: 8/15/14

Start Qty: 8.00

\*8\*

Cust Item ID:

Required Date: 8/15/14

Req'd Qty: 8.00

\*8\*

Customer:

Reference:

Approvals:

Process Plan: MLS

Date: 14-08-08 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

\*NR1\*

Stop

\*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

647.3900

C

100

0.00

\*100\*

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 20.000"

\*\*\* ONE BLANK MAKES TWO PARTS\*\*\*

110

0.00

\*110\*

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1-Machine per folio FB309

DWG REV: C

FOLIO REV: AA

2- deburr and break all sharp edges

DAS

08

9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		
<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		

# Work Order ID 123482

Thursday, August 07, 2014 11:16:41 AM

**\*123482\***

Page 2

Item ID: 647.3912 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Lower Deflector  
Start Date: 8/15/14 Start Qty: 8.00 **\*8\*** Cust Item ID:  
Required Date: 8/15/14 Req'd Qty: 8.00 **\*8\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 08 9-89
<b>*120*</b>									
QC	Memo	0.00							
Quality Control									
130	QC8- Inspect parts - second check	0.00							DAS 20 9-89
<b>*130*</b>									14-09-08
QC	Memo	0.00							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
<b>*140*</b>									
Outsource4	Memo	0.00							
Outsource process - Anodize	Issue P/O to ATG : <u>25743</u>								
	1- Black Anodize as per Dwg 647.3900								
	2- PRIME AS PER DWG, SEE NOTE #9								
	Certification of Comformity is required								

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 123482

\*123482\*

Page 3

Thursday, August 07, 2014 11:16:41 AM

Item ID: 647.3912 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Lower Deflector  
 Start Date: 8/15/14 Start Qty: 8.00 \*8\* Cust Item ID:  
 Required Date: 8/15/14 Req'd Qty: 8.00 \*8\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
*150*									
Packaging	Memo	0.00							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
*155*									
QC	Memo	0.00							
Quality Control									
180	Identify as per dwg & Stock Location: ME3	0.00							
*180*									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

14/9/23 (8) [Signature]

8 [Signature] DDAS 38 99-89 14-9-25

8x SEP 26 2014 DAS 26 9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_ Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

# Picklist Print

Thursday, August 07, 2014 11:16:41 AM

Page 1

Work Order ID: 123482

**\*123482\***

Parent Item: 647.3912

**\*647 3912\***

Parent Item Name: Lower Deflector

Start Date: 8/15/14

Required Date: 8/15/14

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP REV.A NEW ISSUE JFS 14/05/29 VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B0.375X6.000		Purchased		No		100	f	22.5209	0.834	7.023158			

**\*M7075T6B0 375X6 000\***

**\*\***

7075-T6 BAR 0.375" X 6.000"

Location

Loc Qty

Loc Code

MAT049

22.5209

M128038

4.2167

M129891

18.3042

**M130175**

**7**  
**MH**  
**14/09/14**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<table style="width:100%;"> <tr> <td style="width:33%;">           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </td> <td style="width:33%;">           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </td> <td style="width:33%;">           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </td> <td style="width:33%;">           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </td> </tr> </table>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>
Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>			

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

**FAULT CATEGORY**

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 123482
<b>Description:</b> LOWER DEFLECTOR	<b>Part Number:</b> 647.3912
<b>Inspection Dwg:</b> 647.3900 Rev: C	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

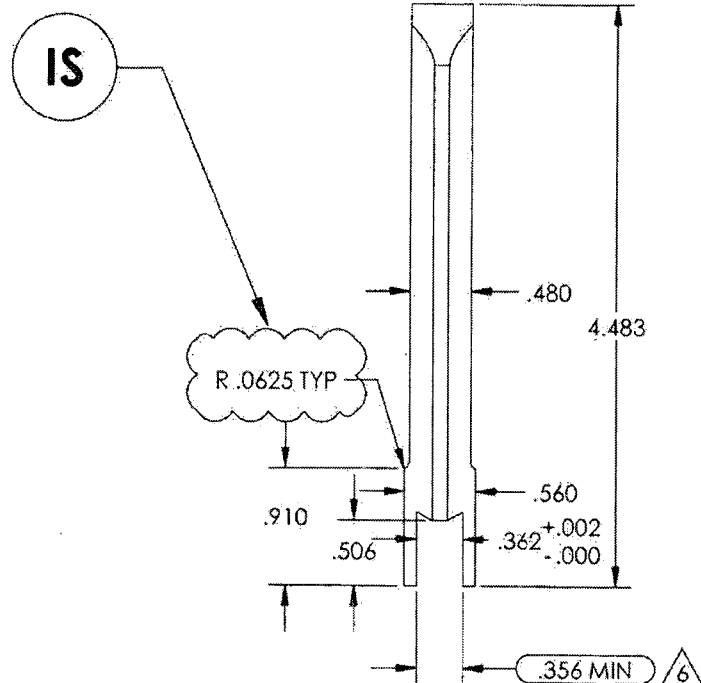
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.130x45°	+/- .005 / +/- .5°	0.125x45°	✓		Vern	GA-13
0.100x45°	+/- .005 / +/- .5°	0.100x45°	✓		"	"
0.340	+0.000 / - .002	0.3395	✓		Mic	GA-03
0.753	+/- .005	0.750	✓		Vern	GA-13
Ø 0.194	+/- .005 / - .001	Ø 0.194	✓		"	"
2.110	+/- .002	2.111	✓		"	"
4.220	+/- .002	4.220	✓		"	"
7.422	+/- .005	7.423	✓		H-6	31006
Ø 0.177	+0.005 / - .001	Ø 0.178	✓		Vern	GA-13
33.4°	+/- .5°	33.4°	✓		Angle M	CNC-12
43.7°	+/- .5°	43.7°	✓		"	"
0.320	+/- .005	0.320	✓		H-6	31006
5.428	+/- .005	5.432	✓		"	"
7.014	+/- .005	7.014	✓		"	"
0.350	+0.000 / - .002	0.3498	✓		Mic	GA-03

<b>Measured by:</b> J.F. <small>DAS</small>	<b>Audited by:</b> 20 <small>9-89</small>	<b>Preliminary Approval:</b>
<b>Date:</b> 14/09/07 <small>08 9-89</small>	<b>Date:</b> 14-09-08	<b>Date:</b>

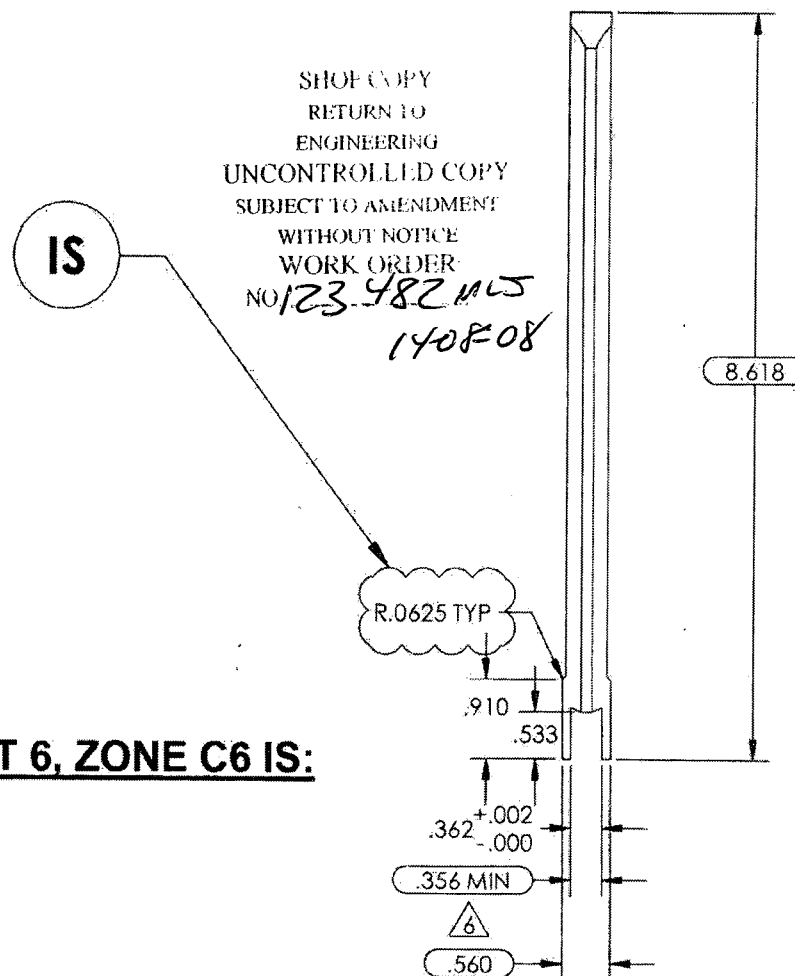
Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 04556		SHEET 1 OF 1	
	DWG NO. 647.3900	REV: C	PREPARED BY D. MEJIA	DATE: 06/10/2014
	DWG TITLE: DEFLECTORS			
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF. NEXT ORDER
TRANSACTION CODES (TC): A-ADD R-REVISE C-CREATE D-DELETE	REASON: DIMENSION CHANGE			ECR: D-14-04



**SHEET 5, ZONE C6 IS:**



**SHEET 6, ZONE C6 IS:**

DOCUMENTS EFFECTED:	<input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRUCTIONS <input type="checkbox"/> ICA <input type="checkbox"/> FMS <input type="checkbox"/> BOM	CHANGE CATEGORY	DER REVIEW REQUIRED
		<input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

# NOTES:

1. MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.

2. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK.

3. DEBURR AND BREAK ALL SHARP EDGES.

4. IDENTIFY IAW MPP-120.

5. APPLY F/N 3 AS REQUIRED TO ALL FAYING SURFACES OF F/N 6, 7 & 8 UPON ASSY.

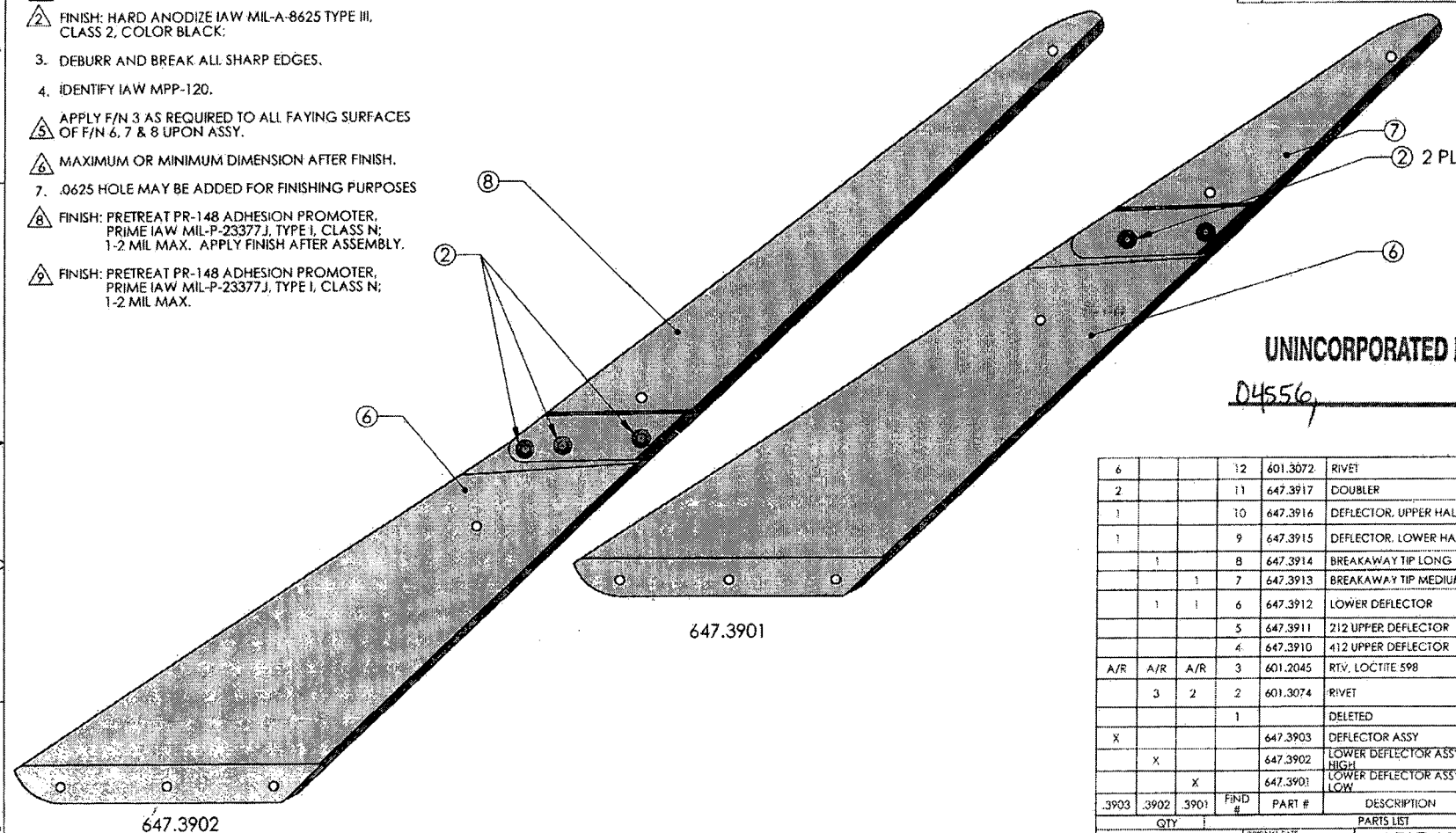
6. MAXIMUM OR MINIMUM DIMENSION AFTER FINISH.

7. .0625 HOLE MAY BE ADDED FOR FINISHING PURPOSES.

8. FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377J, TYPE I, CLASS N; 1-2 MIL MAX. APPLY FINISH AFTER ASSEMBLY.

9. FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377J, TYPE I, CLASS N; 1-2 MIL MAX.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	1431 PROTOTYPE RELEASE PER:		N/C
1/1	INITIAL RELEASE	09/10/09	P. BRAVO
A	INCORPORATED ECN 0394, 0399 & 0395	07/24/12	P. BRAVO
B	INCORPORATED ECN 0405	08/09/13	P. BRAVO
C	INCORPORATED ECN 0408, 0409 & 0420	11/18/15	P. BRAVO



UNINCORPORATED ECN(s)

04556

6			12	601.3072	RIVET	CE3213-49	
2			11	647.3917	DOUBLER		
1			10	647.3916	DEFLECTOR, UPPER HALF	△	△
1			9	647.3915	DEFLECTOR, LOWER HALF	△	△
	1		8	647.3914	BREAKAWAY TIP LONG	△	△△
		1	7	647.3913	BREAKAWAY TIP MEDIUM	△	△△
	1	1	6	647.3912	LOWER DEFLECTOR	△	△△
			5	647.3911	212 UPPER DEFLECTOR	△	△△
			4	647.3910	412 UPPER DEFLECTOR	△	△△
A/R	A/R	A/R	3	601.2045	RTV, LOCTITE 598		△
	3	2	2	601.3074	RIVET	MS20470AD #12	
			1		DELETED		
X				647.3903	DEFLECTOR ASSY		△
	X			647.3902	LOWER DEFLECTOR ASSY		
		X		647.3901	LOWER DEFLECTOR ASSY		
					HIGH		
					LOW		
.3903	.3902	.3901	FINI #	PART #	DESCRIPTION	MAT'L	SPEC
PARTS LIST							
QTY	1	ORIGINAL DATE 09-10-09					
NEXT ASSY (S)	647.3800	DRAWN BY: DISBURS					
		DRAWING APPROVAL: P. BRAVO					
		CONTRACT NO.:					
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE .0005 DECIMALS .0005 FRACTIONS .0005 ANGLES .5°					
				APICAL INDUSTRIES			
				2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
				DEFLECTORS			
				SEE: CA OR CDR	SYN. NO. 647.3900	REV. C	
				B 07/24/12			
				SCALE: NONE	SHEET 1 OF 12		

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

.125 X 45.0° TYP

SECTION B-B

Ø.177 THRU 3PL

.266 X 17.9°

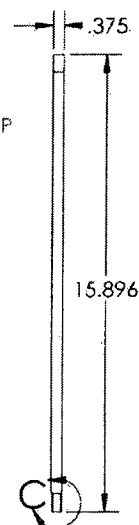
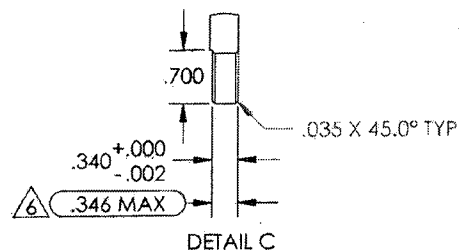
.045

.603

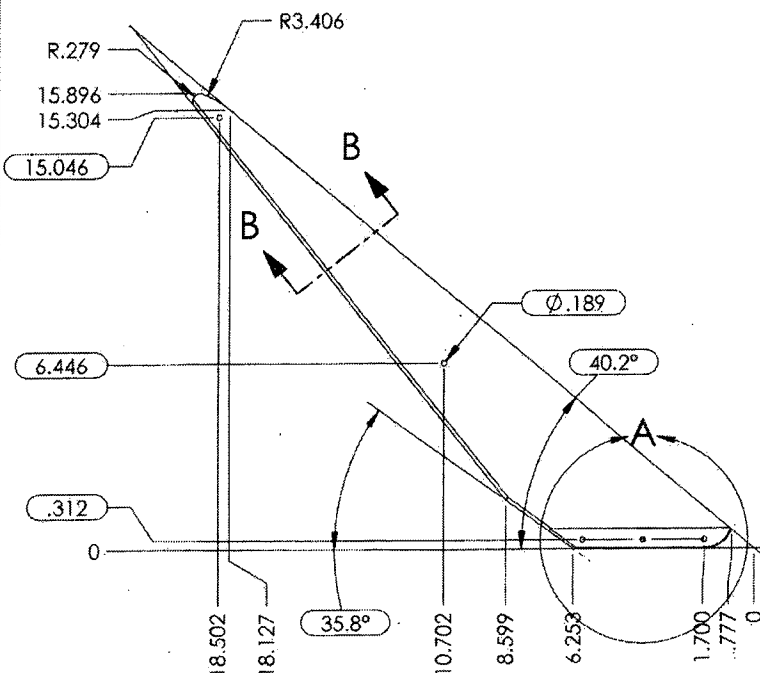
R.915

4.220±.002

DETAIL A



647.3911

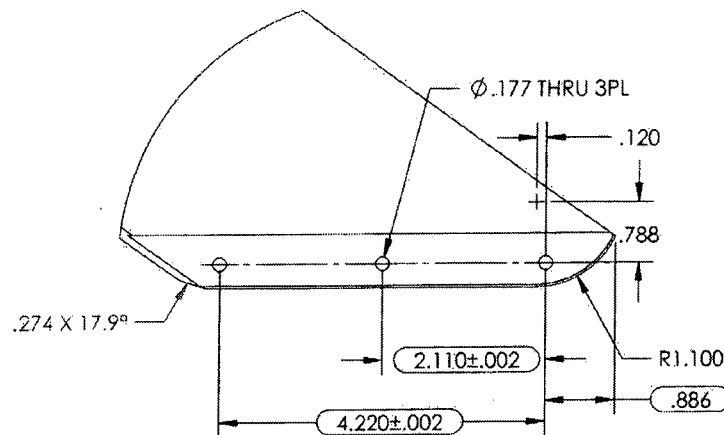


ORIGINAL DATE: 09-10-00		APICAL INDUSTRIES	
DRAWN BY: J. SCHUB		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: J. SCHUB		OCEANSIDE, CA. 92056-3512	
DRAWING APPROVAL: [Signature]		(760)724-5300	
DATE: 09-10-00		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED		SIZE: B	REV: C
DIMENSIONS ARE IN INCHES		DWG. NO: 647.3900	
TOLERANCES ARE:		SCALE: NONE	SHEET: 2 OF 12
FINISHES: .001			
MATERIAL: 304			

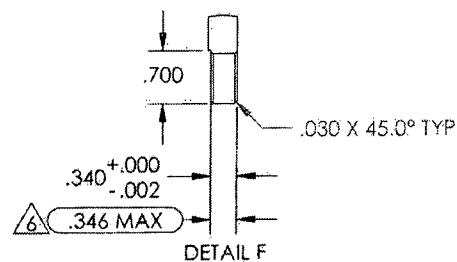
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

.125 X 44.9°

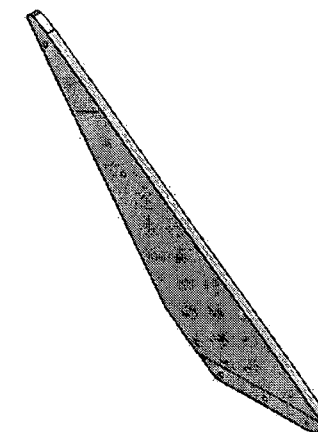
SECTION E-E



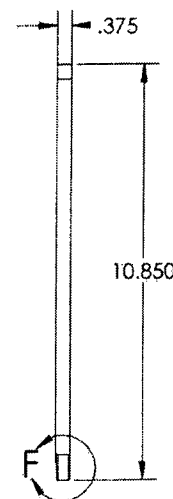
DETAIL D



DETAIL F

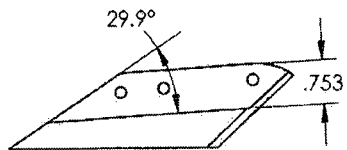


647.3910

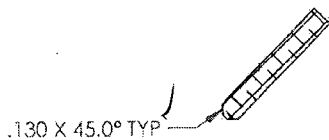


ORIGINAL DATE AND BY: 08/10/08		APICAL INDUSTRIES	
DESIGNED BY: 08/10/08		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: 08/10/08		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		DEFLECTORS	
CONTRACT NO.		REV	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		REV	REV
REV	DATE	REV	DATE
B	07/11/08	C	
SCALE: NONE		SHEET 3 OF 12	

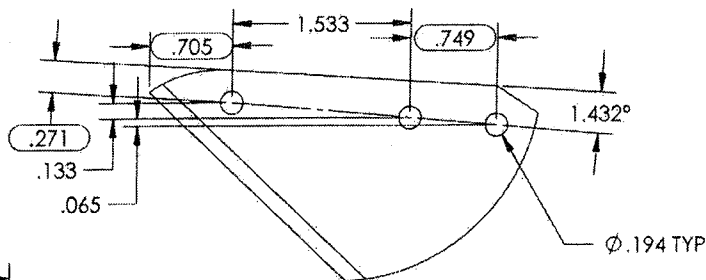
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



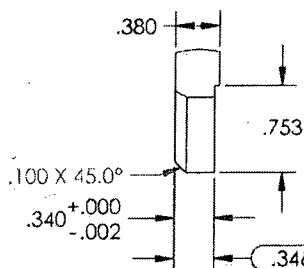
SECTION L-L



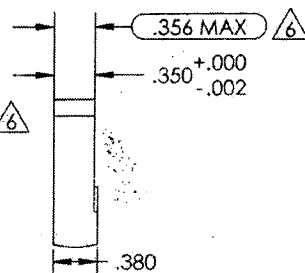
SECTION M-M



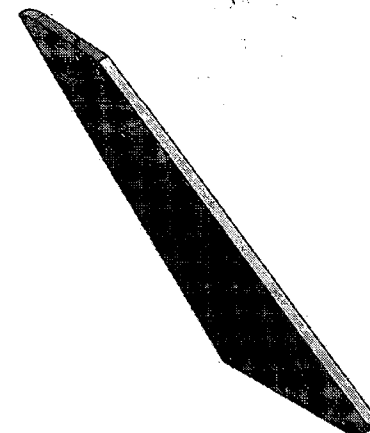
DETAIL H



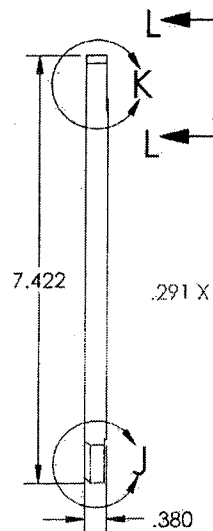
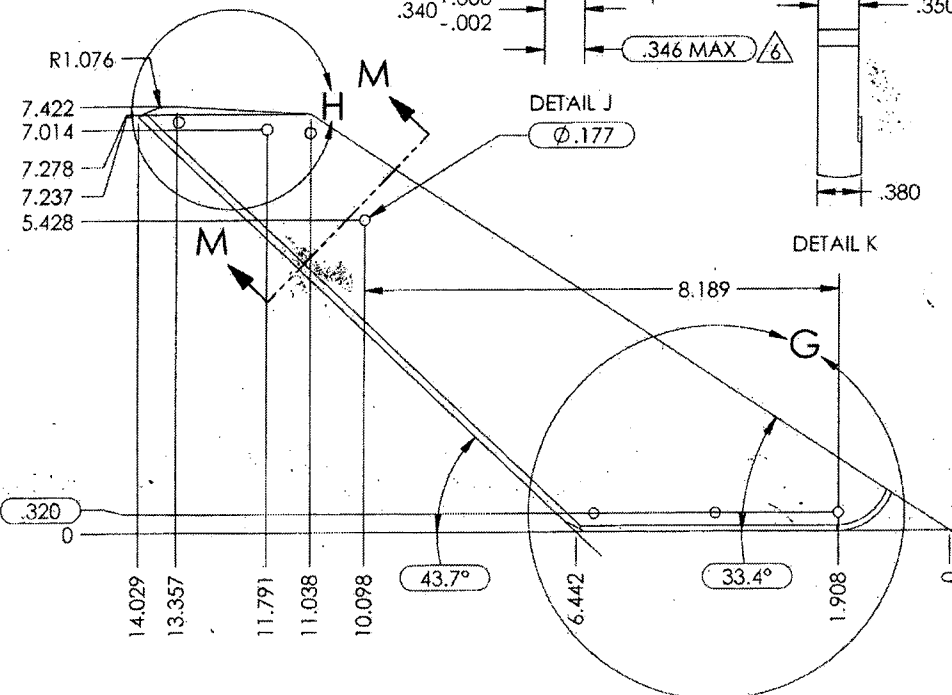
DETAIL J



DETAIL K



647.3912



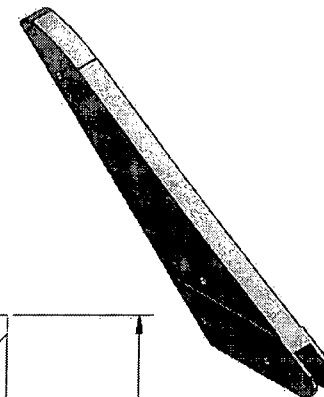
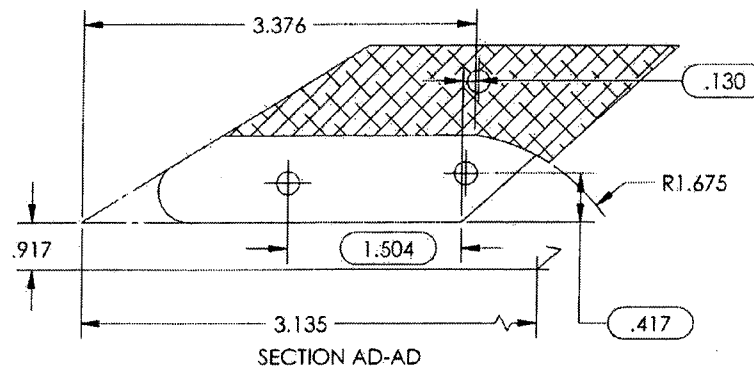
DETAIL G

<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
<b>DEFLECTORS</b>	
SET DATE CODE B 07M16	DWS NO. 647.3900
SCALE NONE	SHEET 4 OF 12

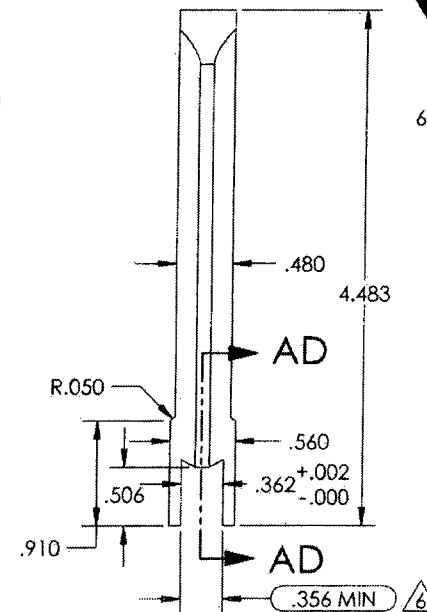
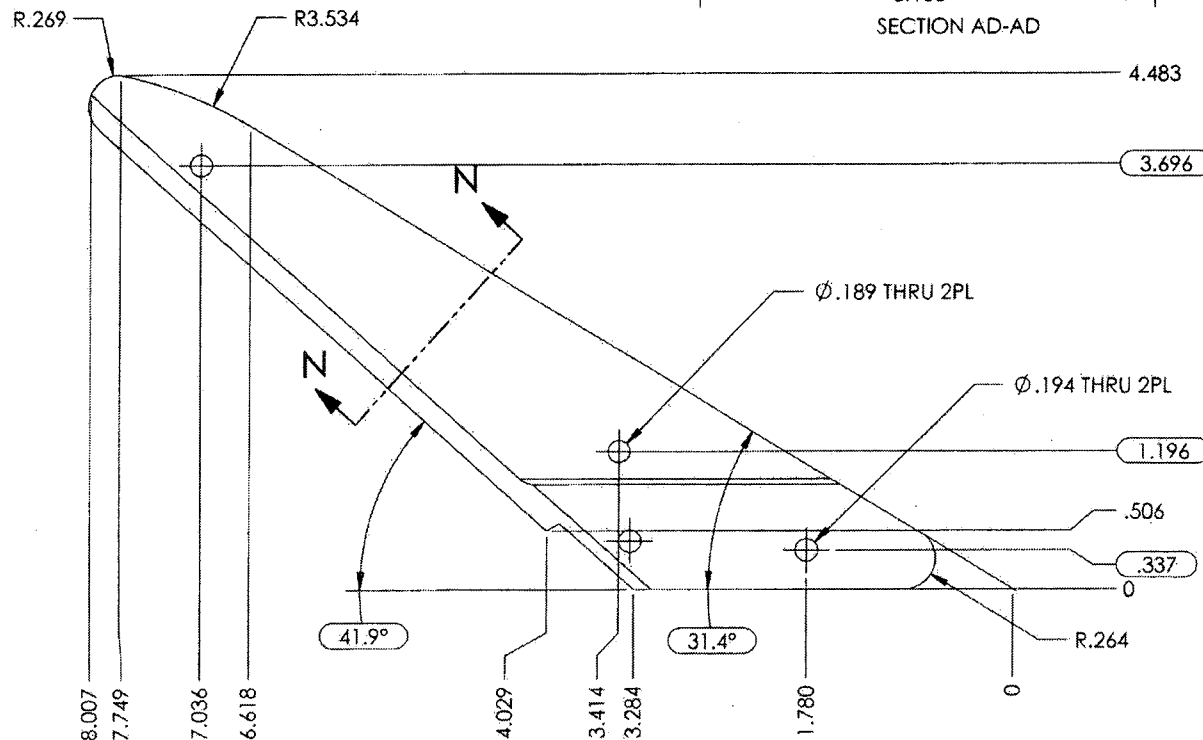
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.180 X 45.0° TYP

SECTION N-N

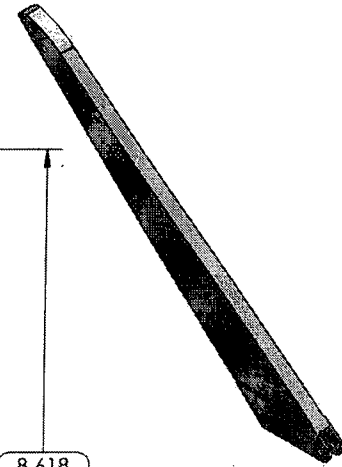
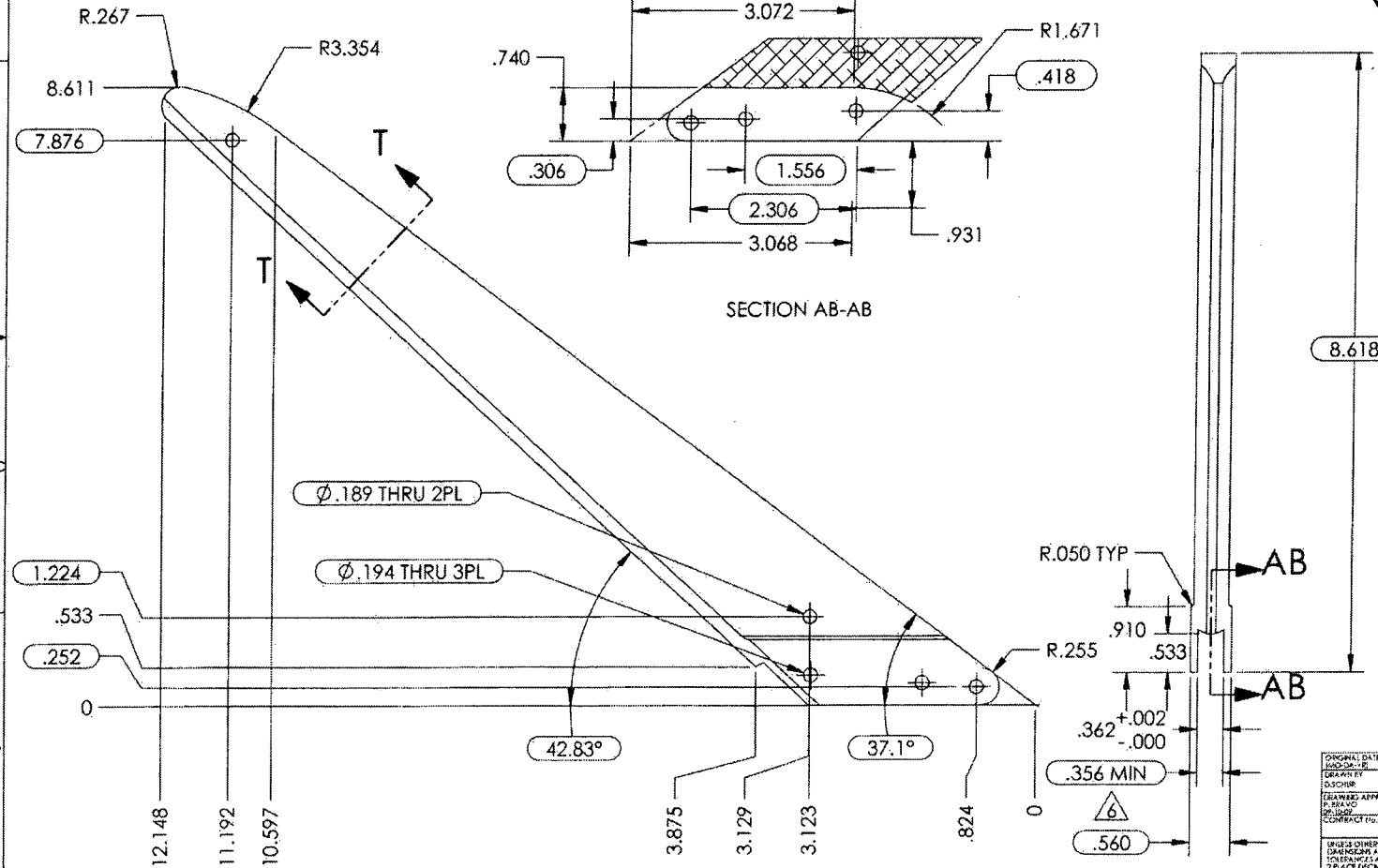
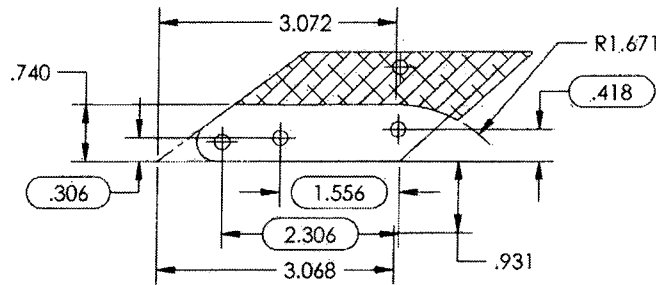
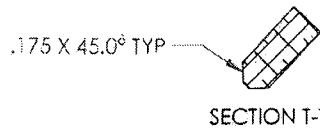


647.3913



<small>           ORIGINAL DATE: 06-10-99            DRAWN BY: SREAGER            CHECKED BY: SREAGER            DESIGNED BY: SREAGER            APPROVED BY: SREAGER            CONTRACT NO:         </small>		<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300	
<small>           UNLESS OTHERWISE SPECIFIED:            DIMENSIONS ARE IN INCHES            TOLERANCES ARE:            FRACTIONS DECIMALS ANGLES            .001 .001 .001         </small>		SHEET: 07M26 SCALE: NONE	REV: C SHEET 5 OF 12

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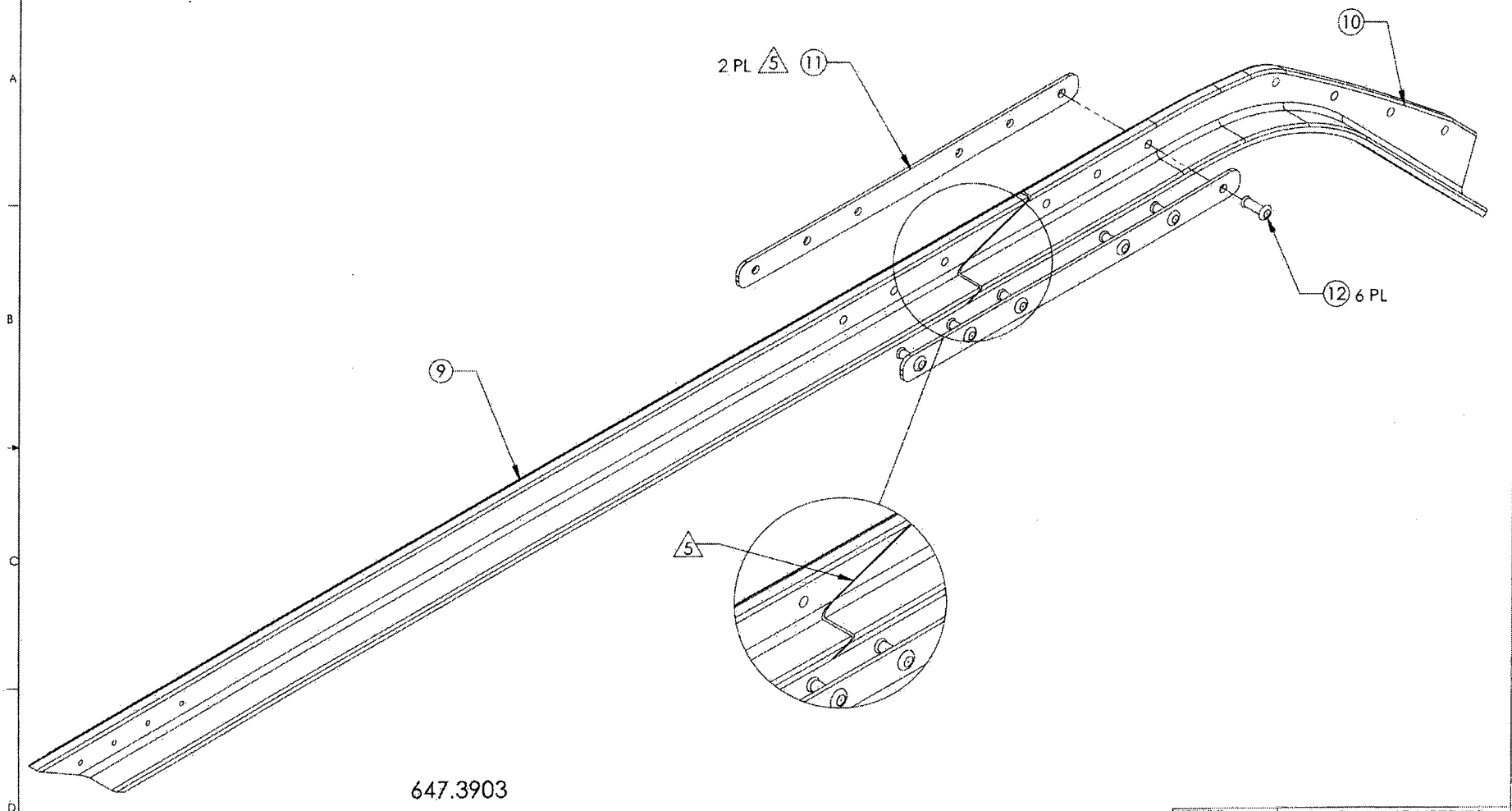
647.3914

ORIGINAL DATE: 06-10-20 DRAWN BY: [blank] CHECKED BY: [blank] DESIGNED BY: [blank] DRAWN BY: [blank] DRAWING APPROVAL: [blank] IN CHARGE: [blank] CONTRACT NO.: [blank]		<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
(UNLESS OTHERWISE SPECIFIED) DIMENSIONS ARE IN INCHES DIMENSIONS ARE 2 PLACE DECIMALS ±.01 UNLESS OTHERWISE SPECIFIED		<b>DEFLECTORS</b>	
SHEET: 07/2416 SCALE: NONE	DWG. NO.: 647.3900	REV. C	SHEET 6 OF 12



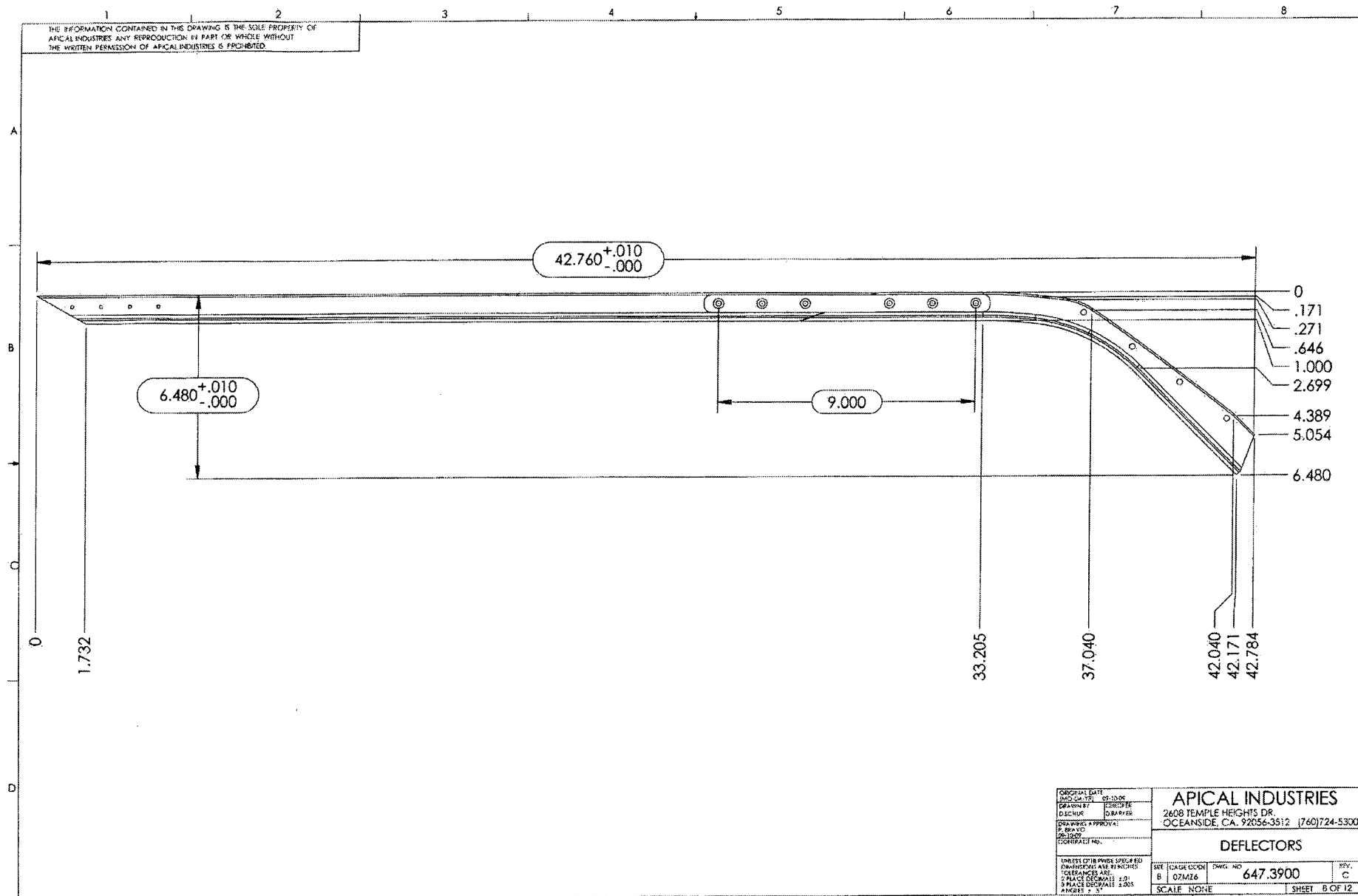
1 2 3 4 5 6 7 8

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

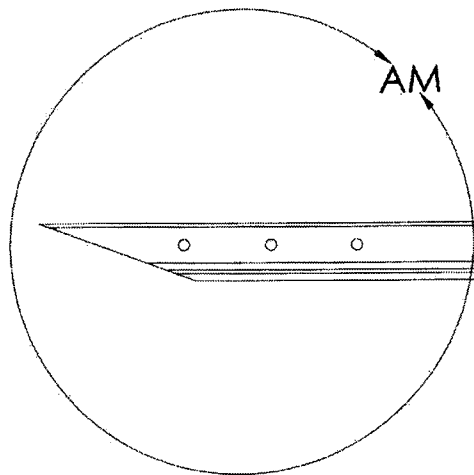


ORIGINAL DATE 03-04-09		APICAL INDUSTRIES	
DRAWN BY D. SCHWAB		2608 TEMPLE HEIGHTS DR.	
DESIGNED BY D. SCHWAB		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL BY D. SCHWAB		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SEE B	SCALE NONE
DWG. NO. 647.3900		REV. C	SHEET 7 OF 12

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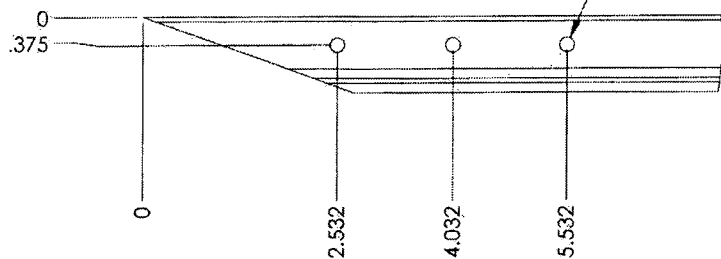
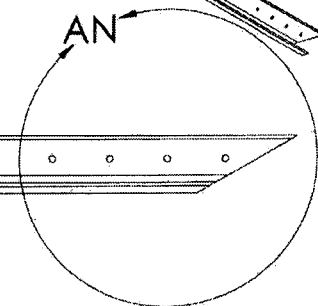


THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES AND REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

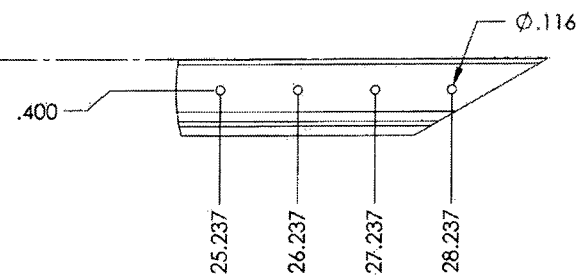


AR  
AR

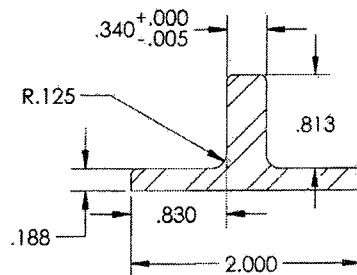
647.3915



DETAIL AM



DETAIL AN  
R.0625 OR 45° CHAMFER X .0625  
4 PL

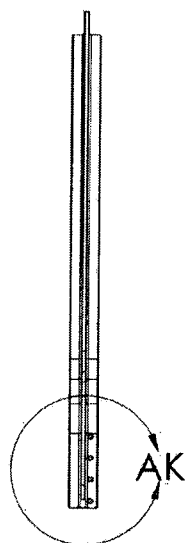


SECTION AR-AR

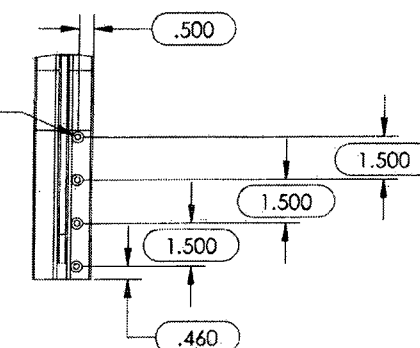
ORIGINAL DATE  
10-20-1971 05-10-06  
DRAWN BY: J. GRIFFIN  
CHECKED BY: J. GRIFFIN  
DESIGNED BY: J. GRIFFIN  
DRAWING APPROVAL  
P. B. V. O.  
10-12-07  
CONTRACT NO.

APICAL INDUSTRIES  
2608 TEMPLE HEIGHTS DR.  
OCEANSIDE, CA. 92056-3512 (760)724-5300  
DEFLECTORS  
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
FRACTIONS DECIMALS ±.01  
ANGLES ±.5°  
SIZE: 11x17  
DWG. NO.: 647.3900  
REV. C  
SCALE: NONE  
SHEET 9 OF 12

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4X  $\phi .196 \pm .010$  THRU ALL  
 $\checkmark \phi .385 \pm .020 \times 100^\circ \pm 1.000^\circ$

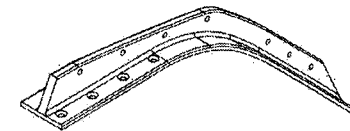


DETAIL AK

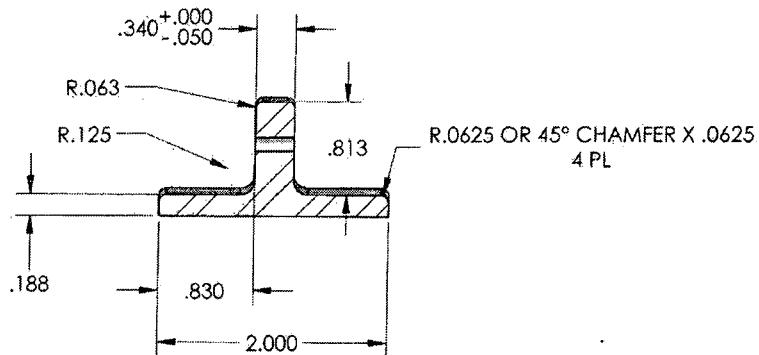
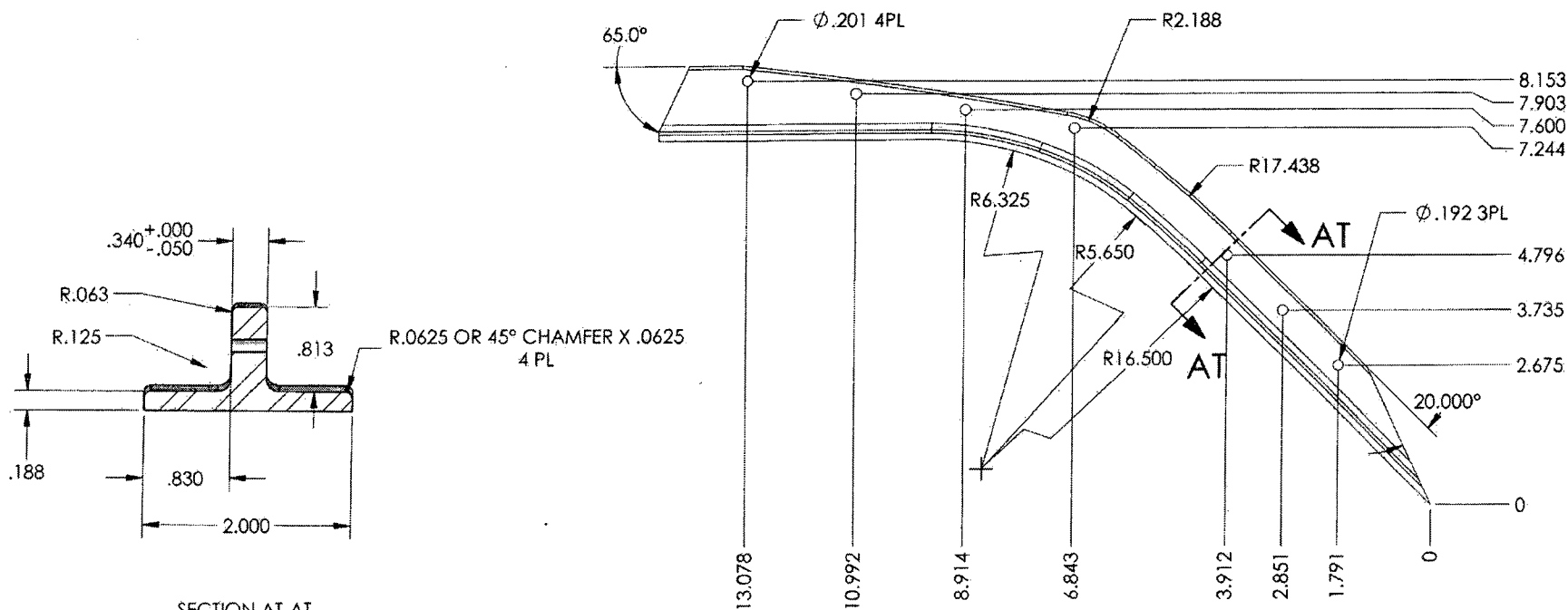
647.3915

ORIGINAL DATE APICAL INDUSTRIES		2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY: [signature] CHECKED BY: [signature] DRAWING APPROVAL: [signature] P. BRAND REVISION		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 ANGLES ± .1°		SHEET: CAGE CODE: DWG. NO. 647.3900	REV. C
		SCALE: NONE	SHEET 10 OF 12

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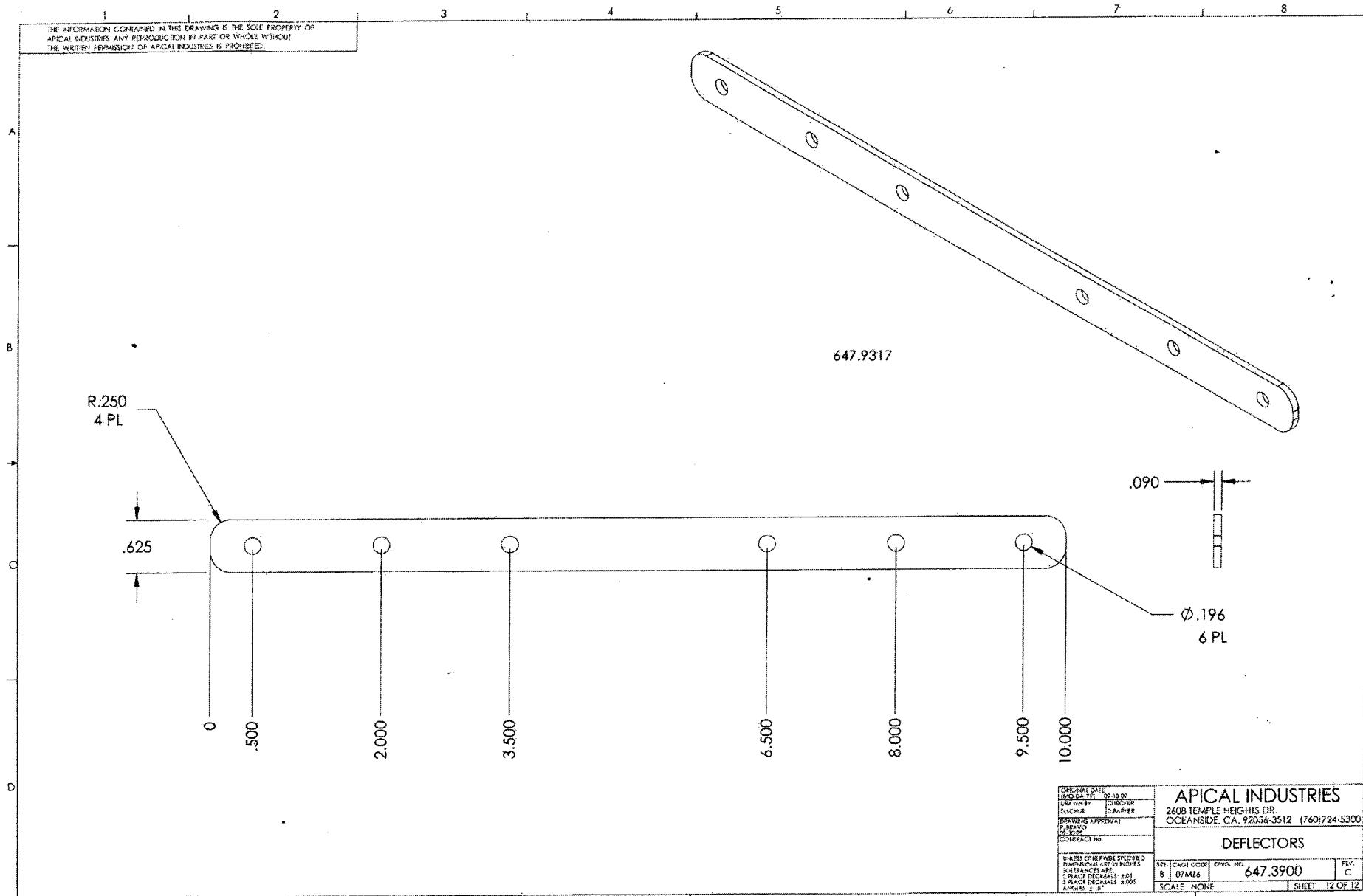
647.3916



SECTION AT-AT

ORIGINAL DATE: 09-10-09		APICAL INDUSTRIES	
DRAWN BY: D. SCHUP	CHECKED: D. SCHUP	2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL:		DEFLECTORS	
BY: [Signature]		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		REV. C	SHEET 11 OF 12

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Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO25743

Purchase Order Date 9/11/2014

PO Print Date 9/19/2014

Page Number 3 of 5

**Order From :**

A.T.G. INDUSTRIES INC.  
731 INDUSTRIELLE ROAD  
ROCKLAND, ON K4K 1T2  
CANADA

VC-ATG001

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone**

613-446-4544

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

VENDOR'S TRUCK

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

CAD

**FOB**

FCA - (Free Carrier)

6	123543	647.3911 UPPER DEFLECTOR REV. C	9/23/2014	4.00	\$24.50	\$98.00
			Yes 9/23/2014			

**Line Total:** \$98.00

7	123482	647.3912 LOWER DEFLECTOR REV. C	9/23/2014	8.00	\$11.45	\$91.60
			Yes 9/23/2014			

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

**Line Total:** \$91.60

8	122971	646.3313 UPPER GUIDE	9/23/2014	6.00	\$13.10	\$78.60
			Yes 9/23/2014			

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

**Line Total:** \$78.60

**Note:**

9/19/2014





A.T.G. Industries Inc.  
731, rue Industrielle Rd.  
PLATING DEPARTMENT  
Rockland, On K4K 1T2  
Canada  
Ph: (613) 446-4544  
Fax: (613) 446-4556

## Pack List

Number: 63276

Date: 23-Sep-14

### To

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

### Ship To

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description		
	PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140613 PO: PO25743 Line:		
8 ea	Part: 647.3912 LOWER DEFLECTOR HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140614 PO: PO25743 Line:	Rev: C	
6 ea	Part: 646.3313 UPPER GUIDE HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140615 PO: PO25743 Line:	Rev: N/C	
5 ea	Part: 647.7822 EYE BOLT FITTING HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140620 PO: PO25743 Line:	Rev: N/C	
5 ea	Part: 647.7821 EYE BOLT FITTING HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140621 PO: PO25743 Line:	Rev: N/C	
5 ea	Part: 647.7819 AFT BRACKET	Rev: N/C	